

REMARKS

*Allowable Subject Matter*

Claims 17, 41-48, 50-53, 76, 77, 79, and 80 are allowed.

The Examiner states:

“Claims 3, 11, 13, 14, 61 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.”

Applicants appreciate the Examiner’s indication of allowable subject matter in claims 3, 11, 13, 14, and 61, but holds any amendment in abeyance because it is believed that all the claims in examination are allowable as explained below.

*Claim Rejections - 35 USC §102*

Claims 1, 4, 5, 7, 8, 9, 18, 54, 56, 58, and 59 are rejected under 35 U.S.C. §102(b) as being anticipated by Armstrong (U.S. Patent No. 4,381,546, hereinafter “Armstrong”) submitted by Applicant as part of the IDS filed on September 12, 2006.

Regarding independent claims 1 and 54, Applicants respectfully traverse the rejections since the Applicants’ claimed combination, as exemplified in claim 1, includes the limitation not disclosed in Armstrong of:

“a constellation storage coupled to the phase noise detector, the compression detector, and the interference detector.”

It is respectfully submitted that the Examiner has failed to establish a *prima facie* case of anticipation by failing to provide reference numbers to support the Examiner’s position as required by 37 CFR §1.104(c)(2), which specifies:

“In rejecting claims for want of novelty or for obviousness, the examiner must cite the best references at his or her command. When a reference is complex or shows or describes inventions other than that claimed by the applicant, the particular part relied on must be designated as nearly as practicable. The pertinence of each reference, if not apparent, must be clearly explained and each rejected claim specified.”[underlining for clarity]

Further, claims 1 and 54 are allowable under 35 U.S.C. §102(b) as not being anticipated by Armstrong because the claimed limitation is not present and because:

“Anticipation requires the disclosure in a single prior art reference disclosure of each and every element of the claim under consideration.” *W.L. Gore & Assocs. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303, 313 (Fed. Cir. 1983) (citing *Soundsciber Corp. v. United States*, 360 F.2d 954, 960, 148 USPQ 298, 301 (Ct. Cl.), *adopted*, 149 USPQ 640 (Ct. Cl. 1966)), *cert. denied*, 469 U.S. 851 (1984). *Carella v. Starlight Archery*, 804 F.2d 135, 138, 231 USPQ 644, 646 (Fed. Cir.), *modified on reh’g*, 1 USPQ 2d 1209 (Fed. Cir. 1986); *RCA Corp. v. Applied Digital Data Sys., Inc.*, 730 F.2d 1440, 1444, 221 USPQ 385, 388 (Fed. Cir. 1984).

Regarding claims 4-5, 7-8, 9, 18, 56, 58, and 59, these dependent claims respectively depend from independent claims and are believed to be allowable since they contain all the limitations set forth in the independent claim from which they depend and claim additional unobvious combinations thereof.

Claims 4 and 18 utilizes a sine and cosine matrix but Armstrong col. 4, lines 7-13, does not mention a matrix but locations of receiver points using ideal phase angles.

Claims 5 and 56 disclose a comparator evaluating the inequality of  $\sigma_x \geq C\sigma_y$  but Armstrong col. 4, line 57, is totally different in determining harmonic distortion using  $\Sigma C_i^2 - (\Sigma C_i)^2 / M \gg \Sigma D_i^2$ .

Claims 7 and 58 disclose a sorter and an X/Y deviation determinator but Armstrong col. 3, lines 44-68, discloses an unrelated baud clock and Armstrong col. 4, lines 18-21, shows distinguishing line impairments using C and D axes.

Claim 8 discloses a compression detector but Armstrong FIG. 5A shows frequency offset; a phase noise detector but Armstrong FIG. 5C shows phase jitter; and an X/Y deviation determinator but Armstrong, col. 4, lines 18-21, shows distinguishing line impairments using C and D axes.

Claims 9 and 59 disclose a X/Y deviation determinator for evaluating the inequality of  $Z_{avg} \leq CZ_{exp}$  but Armstrong col. 4, line 57, is totally different in determining harmonic distortion using  $\Sigma C_i^2 - (\Sigma C_i)^2 / M \gg \Sigma D_i^2$ . Further, the Examiner is engaging in impermissible double inclusion of elements; i.e., reading two claimed elements on the one element in the reference as seen by reference to claims 5 and 56. This renders the Examiner’s reading

indefinite and not anticipatory under *Ex parte* Kristensen, 10 USPQ2d 1701 (Bd. Pat. App. & Inter. 1989).

Based on all of the above, it is respectfully submitted that claims 1, 4, 5, 7, 8, 9, 18, 54, 56, 58, and 59 are allowable under 35 U.S.C. §102(b) as not being anticipated by Armstrong because:

“Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, *arranged as in the claim.*” [*emphasis added*] Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co. (730 F.2d 1452, 221 USPQ 481, 485 (Fed. Cir. 1984)(citing Connell v. Sears, Roebuck & Co., 722 F.2d 1542, 220 USPQ 193 (Fed. Cir. 1983))).

#### ***Claim Rejections - 35 USC §103***

Claims 6, 10, 19, 33-40, 57, 60, 62, 70, 73-75 are rejected under 35 U.S.C. §103(a) as being unpatentable over Armstrong (U.S. Patent No. 4,381,546, hereinafter “Armstrong”).

Regarding claims 6, 10, 40, 57, and 60, these dependent claims respectively depend from independent claims and are believed to be allowable since they contain all the limitations set forth in the independent claim from which they depend and claim additional unobvious combinations thereof.

The Examiner states:

“Armstrong discloses all the subject matter claimed except for defining a value for what seems to be constant C. However, since the exact value of a constant is a matter of design choice, the recited values would have been obvious depending on design criteria.”

Applicants have shown above that Armstrong does not disclose the claimed subject matter. It is respectfully submitted that the exact value of the constant is not a matter of design choice. However, it is respectfully submitted that the Examiner has failed to establish a *prima facie* case of obviousness by failing to provide any indication that these constants appear in Armstrong or are well known parameters used in statistical analysis to support the Examiner’s position as required by 37 CFR §1.104(c)(2), quoted above.

Further, because of the above, it is respectfully submitted that this rejection is based on the Examiner's personal knowledge. Applicants respectfully request an Examiner Affidavit disclosing the Examiner's personal knowledge regarding this limitation pursuant to 37 CFR §1.104(d)(2):

“When a rejection in an application is based on facts within the personal knowledge of an employee of the Office, the data shall be as specific as possible and the reference must be supported, when called for by the applicant, by the affidavit of such employee, and such affidavit shall be subject to contradiction or explanation by the affidavits of the applicant and other persons.”

Regarding claims 19, 62, and 70, dependent claims 19 and 62 depend from independent claims and are believed to be allowable since they contain all the limitations set forth in the independent claim from which they depend and claim additional unobvious combinations thereof. Claim 70 is an independent claim is believed to be allowable at least for the same reasons as set forth in claim 1.

The Examiner states:

“Armstrong fails to teach that the interference detector (Fig.5A) comprises an error calculator, a distribution chart and a data peak detector. But Armstrong teaches comparing statistical properties of constellations and an error calculator, a distribution chart and a data peak detector would have been obviously included in the interference detector since these are well known parameters used in statistical analysis.”

To the extent that the above is understood, Applicants respectfully disagree. Armstrong fails to teach the claimed interference detector as explained above. Therefore, it is respectfully submitted that the Examiner has failed to establish a *prima facie* case of obviousness by failing to provide any indication that the claimed elements are taught or suggested in Armstrong or are well known parameters used in statistical analysis to support the Examiner's position as required by 37 CFR §1.104(c)(2), quoted above.

Further, because of the above, it is respectfully submitted that this rejection is based on the Examiner's personal knowledge. Applicants respectfully request an Examiner Affidavit disclosing the Examiner's personal knowledge regarding this limitation pursuant to 37 CFR §1.104(d)(2), quoted above.

Regarding claims 33-35 and 73, dependent claims 34-35 depend from independent claims 33 and are believed to be allowable since they contain all the limitations set forth in the independent claim from which they depend and claim additional unobvious combinations thereof.

The Examiner states:

“Armstrong teaches quantitative analysis rather than qualitative analysis. However, a qualitative analysis is just as well known in the art as the quantitative analysis when the objective is to see whether or not a received signal is impaired. Thus, it would have been obvious to one skilled in the art to compare the magnitude of received data mapped on the constellation to the ideal data points for the purpose of producing a signal to the use indicating whether it is impaired or not.”

Applicants respectfully disagree for the reasons presented above and because this rejection is under 35 U.S.C. §103(a). Assuming *arguendo* that the Examiner is correct, Armstrong teaches quantitative analysis rather than qualitative analysis so that Armstrong taken as a whole teaches away from qualitative analysis. As stated in *In re Gurley*, 27 F.3d 551, 553 (Fed. Cir. 1994):

“A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be lead in a direction divergent from the path that was taken by the applicant.” *In re Kahn*, 441 F.3d at 990 (quoting *In re Gurley, supra.*)

Thus, it follows that claims 33 and 73 are allowable under 35 U.S.C. §103(a) as not being anticipated by Armstrong because the Court of Appeals for the Federal Circuit has held:

“We have noted elsewhere, as a “useful general rule,” that references that teach away cannot serve to create a prima facie case of obviousness... we have held that such references teach away from the combination and thus cannot serve as predicates for a prima facie case of obviousness.” [deletion for clarity] *In re Gordon*, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984)

Regarding claims 36-39, 74, and 75, these dependent claims respectively depend from independent claims and are believed to be allowable since they contain all the limitations set forth in the independent claim from which they depend and claim additional unobvious combinations thereof.

The Examiner states:

“Since there are a plurality of data points on the constellation, it would have been obvious to compute the average of them before comparing it to the ideal data point.”

Since Armstrong does not teach or suggest the above, it is respectfully submitted that this rejection is based on the Examiner’s personal knowledge. Applicants respectfully request an Examiner Affidavit disclosing the Examiner’s personal knowledge regarding this limitation pursuant to 37 CFR §1.104(d)(2).

Based on all of the above, it is respectfully submitted that claims 6, 10, 19, 33-40, 57, 60, 62, 70, 73-75 are allowable under 35 U.S.C. §103(a) as being patentable over Armstrong because:

“As adapted to *ex parte* procedure, Graham [v. John Deere Co.] is interpreted as continuing to place the ‘burden of proof on the Patent Office which requires it to produce the factual basis for its rejection of an application under sections 102 and 103.’” [insertion and underlining for clarity] *In re Piasecki*, 745 F.2d 1468, 223 USPQ 785, 788 (Fed. Cir. 1984), quoting *In re Warner*, 379 F.2d 1011, 154 USPQ 173, 177 (C.C.P.A. 1967), *cert. denied*, 389 U.S. 1057 (1968).

### ***Claim Rejections - 35 USC §112***

Claims 5, 6, 7, 8, 9, 10, 12, 19, 39, 40, 49, 54, 56, 57, 59, 60, 61, 75, 78 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

It is respectfully submitted that all the claims used in the claims are well known to those having ordinary skill in the art. Further, the terms are also defined in the Specification so the terms are definite and clear in the claims because:

In *All Dental Prodx, LLC v. Advantage Dental Products, Inc.*, 309 F.3d 774 (Fed Cir. 2002), the appeal centered on the claim term, “original unidentified mass,” which the lower court concluded did not meet the requirements of the first and second paragraphs of 35 USC §112. The CAFC adopted the same claim construction of the lower court but held that the

claim term was properly described in the specification and was definite and clear in the claim as a result.

The Examiner states: "Claims 5 and 56 recite terms  $\sigma_x$ , C and  $\sigma_y$  that are not defined." However, it is respectfully submitted that these terms are defined in Specification page 11, lines 19-20:

"Where  $\sigma_y$  is the measure along the ideal axis determined in step 1212, and  $\sigma_x$  is the measure perpendicular to the ideal axis determined in step 1210. C is a constant and is preferably 1.5."

The Examiner states: "Claims 7, 8, 19 and 54. "X/Y deviation " is not defined." However, it is respectfully submitted that this is not a term but is an element called a "X/Y deviation determinator 902" and its function is defined in Specification page 12, lines 10-15:

"[T]he X/Y deviation determinator 902 determines the magnitude of the vector from the origin to the datum point. The X/Y deviation determinator 902 then uses the standard equation for the arithmetic mean to determine the average magnitude of all the vectors to all four cells. The X/Y deviation determinator 902 then determines the distance of the vector from the origin to the ideal data point for one of the cells."

The Examiner states: "Claims 9, 39, 59 and 75 recite terms " $Z_{ave}$ ", "C" and  $Z_{exp}$ " but fails to define their meanings." However, it is respectfully submitted that these terms are defined in Specification page 12, lines 22-23:

"Where  $Z_{avg}$  is the average vector magnitude for all the data points, C is a constant, and  $Z_{exp}$  is the magnitude of the ideal vector. Preferably C is 0.98."

The Examiner states: "Claims 12, 49, 61 and 78 recite terms such as " $Y_{ave}[b_4]$ " but fails to define their meanings." However, it is respectfully submitted that the terms, including the foregoing example, are defined in the Specification, and the example on page 13, lines 4-11:

"The X/Y deviation determinator 902 then calculates the average y component for each datum point in each cell. ...

Where  $b_4$  is the cell farthest from the y-axis ..." [deletions and underlining for clarity]

The Examiner concludes: "Claims 6,10,40,57, 60 and are rejected for the same reason for their respective dependence on rejected claims." However, it is respectfully submitted that these terms are not indefinite because it is well settled that:

"The] language of the claims, read in light of the specification" is to be considered when determining whether the claims are indefinite. *Allen Archery Inc. v. Browning Mfg. Co.*, 819 F.2d 1087, 2 USPQ2d 1490, 1494 (Fed. Cir. 1987)."

### *Conclusion*

In view of the above, it is submitted that the claims are in condition for allowance and reconsideration of the rejections is respectfully requested. Allowance of claims 1, 3-14, 17-19, 33-54, 56-62, 70, and 73-80 at an early date is solicited.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including any extension of time fees, to Deposit Account No. 50-0374 and please credit any excess fees to such deposit account.

Respectfully submitted,



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